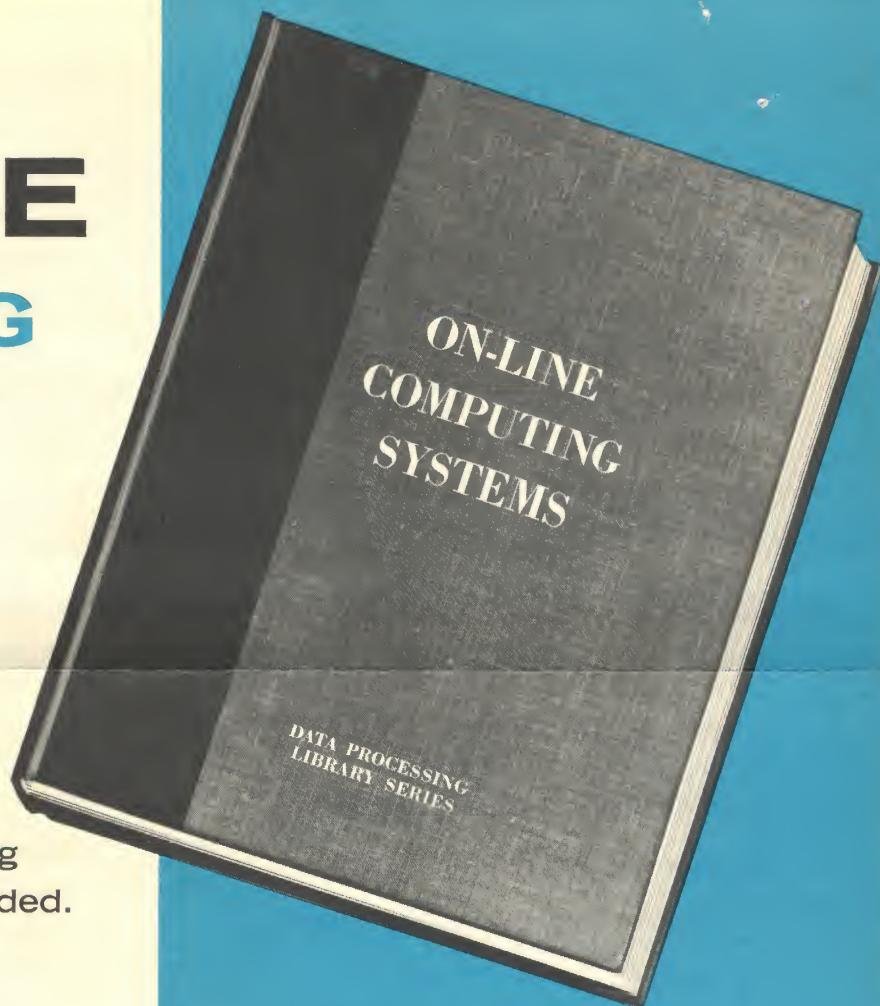


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On-line data processing systems have recently become of interest in digital computer applications. Developments in digital transmission and availability of faster bulk storage devices and the use of man/machine interface devices have stimulated a new kind of data processing. In this processing, information is entered into the system as it is generated. Outputs are requested as they are required. These inputs and outputs are occasioned by external stimuli — man or machine — to which the computer responds.

On-line computing systems include at least two important classes of systems. The first is one in which response times are measured in milliseconds. Such systems are automatic, and many of them are closed loop, since the timing requirements preclude the intervention of men. Examples are process control applications, military satellite control systems, and radar tracking and recording systems.

The second important class includes computer systems to which several interrogation and display devices are connected, thus establishing man/machine communication. Examples are found in military command and control systems, space vehicle command and control systems, and various commercial systems.

This book considers both classes of on-line systems. In addition, it covers, with a considerable degree of thoroughness, the principles, disciplines, and practices which are applicable to on-line systems design, both in machinery and programming.

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